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I want to thank you for giving the National Safety Council (NSC) the opportunity to respond to the FHWA's proposal to seek comments regarding improvements that can be made to its regulations on Traffic Safety in Highway and Street Work Zones.

As you are aware, the National Safety Council (NSC) is a federally chartered non-profit membership service organization centered on protecting life and promoting health. Our mission is "to educate and influence society to adopt safety, health and environmental policies, practices and procedures that prevent and mitigate human suffering and economic losses arising from preventable causes."

The possibility of increased worker and motorist incidents is alarming. We welcome the opportunity to assist the FHWA in better addressing work zone safety and mobility issues.

If you have any questions regarding our responses to the questions posed in ANPRM, please do not hesitate to call.

Bobby Jackson  
Vice President,  
National Programs

202-293-2270 x494

Attachment - Comments on the Advanced Notice of Proposed Rulemaking for Work Zone Mobility and Safety, Docket No. FHWA-2001-11130

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◀ October 4-11, 2002  
◀ Expo: October 7-9, 2002  
◀ San Diego, California

**National Safety Council**

**Comments on the**

**Advanced Notice of Proposed Rulemaking**  
**for Work Zone Mobility and Safety**  
**(29 CFR 630)**

**Published in the Federal Register**  
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The National Safety Council (NSC) is a federally chartered non-profit membership service organization centered on protecting life and promoting health. Our mission is "to educate and influence society to adopt safety, health and environmental policies, practices and procedures that prevent and mitigate human suffering and economic losses arising from preventable causes." Founded in 1913, the NSC has served as the premier source of safety and health information in the United States and has grown to 37,500 organizational members, employing more than 30 million people. Nationally chartered by the United States Congress in 1953, our federal charter charges us to "arouse the nation" in safety and in accident prevention. The NSC has the unique distinction of being the only federally chartered safety and health organization in the United States. Along with its national responsibilities, the Council carries out its mission on the community level through a network of 50 affiliated chapters and 11 divisions throughout the United States.

The possibility of increased worker and motorist incidents is alarming to those involved in traffic and construction safety. According to OSHA, roadway construction is one of the most hazardous occupations in the nation. Accident and fatality rates for heavy and highway contractors top the list of construction rates, while construction rates generally exceed the rates for other U.S. industries. Over the past 10 years, an average of 760 people are killed each year in roadway work zone incidents - approximately 120 of those are workers. In 1998, work zone incidents are responsible for nearly 39,000 injuries at a societal cost of over \$3 billion.

Unfortunately, as we had feared, the number of work zone related fatalities has increased steadily since the passage of TEA-21: from 772 in 1998 to 872 in 1999 to 1,093 in 2000. (Source: National Work Zone Safety Clearinghouse)

The hazardous conditions of roadway construction may be compounded by motorist frustration or “road rage” as FHWA estimates that construction work zones may occur as frequently as every 40 – 50 miles on the interstates.

In general, NSC’s comments on FHWA’s Advance Notice of Proposed Rulemaking (ANPRM) follow the question and answer format set forth in the Federal Register Notice of Wednesday, February 6, 2002. For issues of importance to NSC and its members that were not addressed in FHWA’s questions, additional comments appear at the end of the document. ???

### **General Questions**

1. *Should there be a National policy to promote improved mobility and safety in highway construction and maintenance? If so, should the National policy be incorporated into the regulation or issued separately as guidance that outlines guidelines and best practices for implementation?*

#### **NSC Response:**

FHWA should take the lead in developing, issuing, and publishing a national policy on work zone safety. While work zone safety responsibilities are shared by other Federal and state agencies, FHWA is clearly the Federal agency that should take the lead in developing a national work zone safety policy. FHWA should work closely with the major stakeholders in the highway safety community in formulating this policy.

The policy should be comprehensive - address safety on “both sides of the barrel,” and therefore would contain broad guidance, articulated in a policy document(s), as well as specific regulations implemented through appropriate rulemaking within the respective agencies of jurisdiction. The fact that we don’t have hard data on work zone fatalities and injuries is clearly an indication that we need a national policy on work zone safety.

NSC would be opposed to a work zone policy that was developed without the benefit of stakeholder input. NSC believes that such an action would likely result in conflicts and confusion among federal agencies and the regulated community.

2. *Are the current provisions of 23 CFR 630, subpart J adequate to meet the mobility and safety challenges of road construction and maintenance projects encountered at all stages of project evolution? If they are not adequate, what are the provisions and/or sections that need to be enhanced and/or modified to ensure mobility and safety in and around work zones?*

**NSC Response:**

The current regulations are not adequate to meet the safety and mobility needs of road construction and maintenance projects. While the existing regulation provides adequate requirements for traffic control plans, other aspects of the regulations are broad and vague. These ambiguities render much of the regulation virtually unenforceable and provide an uneven playing field for bidders.

All the stakeholders would benefit by clearer, and more comprehensive standards to provide greater uniformity for items such as:

- (1) Requirements for maintaining full lane capacity during peak traffic periods,
- (2) Providing positive barrier protection and separation at all times during construction,
- (3) Including provisions to enable the work space to be expanded during off peak traffic periods,
- (4) Providing entry and exit procedures for supply vehicles between traffic space and work space,
- (5) Including provisions for alternative project scheduling and staging construction to minimize disruption of traffic.
- (6) Requirements for traffic control and pedestrian movement within the work area of the work zone, i.e., Internal Traffic Control Plans; and
- (7) Training and competencies of key personnel dealing with issues such as traffic control devices, flaggers, work zone design, and traffic flow. Consideration of industry-recognized third certifications like the NSC's Certified Utility Safety Administrator program (CUSA).

Specific requirements exist in other areas of the Federal-aid highway program, such as environment and contracting procedures. With the lives of road users and workers at risk, it would seem prudent to develop specific procedures similar to the other areas of the Federal-aid Highway Program.

**Note:**

Attached is an example of a contract bid language that addresses basic elements of a contractor safety plan, training, and an Internal Traffic Control Plan (Attachment 1). Another example of a site-specific internal traffic control plan can be found in a rule change being considered by the State of Washington Department of Labor.

3. *Should work zone regulations be stratified to reflect varying levels and durations of risk to road users and workers, and disruptions to traffic? What would be the most appropriate stratification factors (e.g., duration, length, lanes affected, Average Daily Traffic (ADT), road classification, expected capacity reduction, potential impacts on local network and businesses)?*

**NSC Response:**

NSC believes that FHWA must take into consideration the type of work being performed (i.e. resurfacing a bridge on a high-traffic highway versus replanting flowers in the median of a low-traffic secondary road). Clearly, FHWA should not adopt a "one-size-fits-all" approach.

NSC recommends a framework that correlates the type of roadway (high speed, limited access, urban, rural, two lane, etc.) with the type of work and conditions (long-term, short-term utility, weather conditions, time of day, hazard history of roadway, etc.)

4. *Currently, there are several definitions for work zone, as defined by the MUTCD, ANSI D16 (proposed), NCUTLO and NHTSA. These definitions, even though similar in basic structure and implication, differ in length and the degree of detail addressed. Should there be a common National definition for work zone to bring about uniformity? If so, what should the common National definition be?*

**NSC Response:**

It has long been recognized that we need better data regarding work zone safety crashes and injuries and illnesses. It is highly unrealistic to believe that states and local jurisdictions can improve record keeping and reporting of numbers, size, duration, incidents, injuries and fatalities related to work zones while there is not a common, national definition.

It is important for FHWA to take the lead in developing such a definition, in cooperation with the public and private stakeholders in the highway transportation community. (The proposed ANSI D16 definition might be a good place to start.)

In NSC's experience, the simplest way to define a work zone is to limit it to the area between the first advanced warning sign (as required in the MUTCD—not necessarily ITS-type traffic notification signs) and the last "End Construction" sign. This is *the work zone*.

In NSC's opinion, reporting forms should have two questions: 1) Did the incident take place "within" a work zone? 2) Was the incident *related* to work activity in the work zone? In using this approach, we will be able to determine if the work zone activity was related to the reported incident. NSC anticipates that there are incidents *within* a work zone that are unrelated to the construction work, as well as incidents *outside* the work zone that are related to construction work inside the zone. NSC believes that a basic, easy to understand definition, with questions related to that definition would solve many of the ambiguities surrounding work zone definitions and related reporting issues.

A national definition, combined with an effective outreach program designed to educate the law enforcement community, emergency medical providers, maintenance and other road users, would greatly assist in better data collection and facilitate better identification and implementation of corrective measures.

5. *How, if at all, are impacts to road users due to road construction and maintenance part of the management and operations considerations that are addressed in transportation plan*

*development?*

**NSC Response:**

The impact on the users due to road construction must be balanced against the need for additional capacity at present, for the duration of the transportation plan, and for the projected future, along with the operating efficiency of the roadway system for those same time periods.

Far too often, the needs of the road users and construction workers are not addressed in the early design stages and development of the traffic control management/ or transportation plans. There needs to much greater emphasis on positively protecting and separating motorists from construction workers, factoring in average daily traffic counts, expected capacity reduction, anticipated congestion, the impact on local business and industry, and not reducing lanes or capacity during “peak traffic periods.”

More consideration needs to be given to allowing capacity reductions and taking lanes during “off peak traffic periods” in order to provide additional work- space to safely accelerate construction. Positively protecting workers with barriers throughout construction should be required in the TCP wherever traffic volume and or speeds dictate. These kinds of enhancements would assist in the development of better traffic control plans, to improve safety, improve public acceptance, facilitate and even playing field within the TCP and encourage the use of our transportation facilities more efficiently and effectively. It would also encourage the use of improved technologies to help expedite project completions, improve quality and mobility..

Nonetheless, keeping the motoring public informed of work zone delays is critical (the many ways of keeping the public informed during the Springfield, VA Mixing Bowl Project has been a resounding success story).

6. *To what extent should the metropolitan and statewide transportation planning processes address crosscutting policy issues that may contribute to increases in project costs (for example, the use of more durable materials, life-cycle costing, complete closure of facilities, information sharing on utilities, etc.)? Is it appropriate to consider the impact of construction and maintenance projects to road users in planning for future roadway improvements at the metropolitan level? At the statewide level? At the corridor level?*

**NSC Response:**

This question must be considered in the context of the facility location and demographics. It may be very difficult to develop a regulation to cover this body of issues, given the variety in roadway construction and maintenance projects.

On facilities such as those that carry a large amount of traffic, serve as critical regional links in the network, or are located in areas that make construction expensive and difficult, it is important

to consider costs related to user impact, life-cycle, duration of materials, etc. If a jurisdiction is considering a bridge or major arterial repair, then it is important to consider the life cycles (e.g., 20 versus 50 years).

In regions where there are alternative routes for traffic diversions or volumes that can withstand more frequent maintenance and renovation, then extended life-cycle planning may not be so critical.

Another important factor to consider in this planning process are the safety risks to motorists and workers. There may be roadways that, while their location or volumes do not necessarily lead to longer life-cycle engineering and materials, they may pose safety threats to workers and/or motorists during construction, maintenance or renovation. The safety/risk factor is an important consideration in the planning process.

NSC believes that it is appropriate to consider the additional costs associated with more durable and conceivably more expensive work zone materials and improved work zone technologies that can have the positive effect of accelerating construction, improving safety, and enabling work under heavy traffic conditions commonly encountered in metropolitan and heavily congested corridors. This consideration will have the broadest benefit to the majority of the road users due to the fact that the most congested highways are in metropolitan areas.

In all instances, when new construction is being undertaken, planners and officials should consider the maintenance and renovation needs that will arise during use and at the end of the planned life cycle. Safety and traffic management concerns should be fixed during present operations so that unnecessary unsafe, inconvenient, and expensive repairs and renovations can be avoided during the next maintenance and renovation stages.

7. *What data and methods are currently available to address the above considerations? What else would be needed to support such considerations in the metropolitan and statewide transportation planning processes? At the corridor level?*

**NSC Response:**

There are several evaluation instruments available for making such determinations, including estimates for life-cycle costing, average daily traffic (ADT), traffic splits, traffic speeds, motorist delays, crossover accidents/fatalities, and queuing sensors.

What is important, is that the use of this kind of information and improved strategies be encouraged so that they can be used to develop improved traffic control/ management plans for better work zone performance..

As previously noted, accurate safety data would be an important piece of information in the

transportation planning process.

8. *How can the FHWA encourage agencies to incorporate the above considerations (life-cycle cost analysis, alternative project scheduling and design strategies, etc.) in the decision-making process for evaluating alternative project designs? What are the most appropriate ways to include these considerations in project design?*

**NSC Response:**

While NSC is opposed to extended processes and procedures that would further delay needed construction and maintenance projects, the Council does believe that earlier “constructability” reviews at the design stage would allow more segments of the industry to provide feedback to ensure that projects are able to move forward with minimal delays.

A regulation that encouraged involvement of the construction segment of the industry during the planning process could alleviate many delays caused by safety concerns, project sequencing, and ease of construction.

FHWA must do more than “encourage” state agencies to incorporate these strategies. Regulations, financial incentives and disincentives need to be employed to ensure that NHS and metropolitan corridor projects consider off-peak nighttime work, improved technologies, more durable materials while maintaining full lane capacity during peak hour traffic periods. The project traffic control plans must specifically call for the features identified in the design. These features must also be present in the contract documents. Because of the importance of human life and congestion relief, FHWA must take a leadership role in helping this become a reality.

Once the FHWA has made a determination for incorporating the relevant design, strategies and practices during the planning process, FHWA should be required to provide a full accounting/explanation of their decisions through a report available for public review.

9. *Can user cost be a useful measure to assess alternative means to design and implement work zones? What weight should agencies assign to user costs as a decision-making factor in the alternatives evaluation process? Should analytical tools, such as QuickZone, \16\ QUEWZ-98, \17\ etc., be used for the evaluation of various design alternatives and their estimated impact to the public? What other impact measures (delay, speed, travel time, crashes) should agencies estimate and use for alternatives evaluation?*

**NSC Response:**

User cost may be one of many considerations when designing and implementing work zones, but it should not be the predominant factor. There are other considerations that NSC believes need more weighty consideration, i.e., worker and motorist safety. Worker and motorist safety, along with congestion, travel delays, alternative project scheduling and project duration should be fully

considered in developing effective designs and traffic control plans.

While user cost be a useful measure to assess alternative means to design and implement work zones, it would be a very difficult issue to address through regulations, and, may more appropriately be addressed through contract specification or contract oversight.

The goal should be a safe, efficient and a congestion free work zone. The use of analytical tools such as QuickZone and QUEWZ-98 could be helpful perhaps to the larger jurisdictions, but not necessary. Many local agencies are not resourced or equipped for this type of evaluation.

*10. Given the fact that utility delays have been cited as roadblocks to efficient project delivery, what should be done to address this issue?*

**NSC Response:**

The FHWA, through its Division offices, should encourage early involvement of utility companies in early in the planning phases of roadway construction, maintenance and renovation, and should be viewed as partners on the project. By informing and involving the utilities early in the program, they may be able to synchronize their planning process to the construction process, and both will realize gains through a coordinated program.

*11. The current regulation specifies the requirement for TCPs for work zones, but does not address the issues of sustained traffic management and operations, or traffic enforcement methods and partnerships. Should the scope of TCPs be expanded to include such considerations? What are the most relevant practices or technologies that should be considered in planning for traffic management, enforcement and operations? What are the most appropriate ways to facilitate the inclusion of such considerations in traffic control planning?*

**NSC Response:**

NSC believes it is important for work zone TCP's to include elements of public communications and outreach—including real-time information, review and revision (if necessary) of the effectiveness of the TCP, and a means to enforce traffic management in the TCP. The level of detail and the complexity of the expanded TCP should be commensurate with the duration and location of the work.

NSC believes that the work zone's TCP's should be expanded and that the scope of the traffic control plans should be broadened to contain specific requirements on how the project is to be advanced. These requirements should include, but not be limited to consideration of features such as requiring full lane capacity during peak traffic periods, positively separating workers and motorists with barriers, accelerating construction by expanding the work space during off peak traffic periods and including provisions to facilitate alternative project scheduling and providing entry and exit procedures for supply vehicles between traffic space and work space. Contract

documents must be specific and incorporate these features into the traffic management and operations planning in order to provide a level playing field. If the desired results are to be achieved, all bidders must be on an equal footing. One effective way to integrate this process is to provide a safety and/or mobility incentives (financial) to the states to be passed down to the contractors and traffic control subcontractors.

Additionally, traffic control planning should be broadened to ensure that work safety and protection is considered when determining the geometry and traffic control devices to ensure that they are protected to the maximum extent reasonable. In this instance, NSC recommends that FHWA consider a hierarchy of traffic controls for worker protection, including (in order of protection) total closure, protective barrier, channelizing barrier, drums, cones and tubular devices.

See earlier reference (Attachement 1) in response to Question # 2 regarding Internal Traffic Control Plans.

*12. Should TCPs address the security aspects of construction of critical transportation infrastructure? Should TCPs address the security aspects of work zone activities in the vicinity of critical transportation or other critical infrastructure?*

**NSC Response:**

When appropriate, the TCP should address security aspects, not only of critical transportation infrastructure and linkages, but also concerns of nearby offices, installations, military bases, government facilities, etc. that may be critical to national security.

Traffic control plans should address security issues before, during and after construction in the event of an emergency. This would better serve the constructor and the road user, in the event of an unplanned emergency or incident. Maximizing the capacity of the roadway, and providing "flexible" traffic control in the work zone that could accommodate unexpected incidents, should be part of any national emergency or incident planning. Consideration should be given to establishing detailed and appropriately identified emergency routes, flexible barriers, openings, and detours.

*13. How should TCPs address Americans with Disabilities Act (ADA) requirements?*

**NSC Response:**

In urban areas where the duration of the project is short duration, the TCP should provide for safe passage for pedestrians, cyclists, or other non-motorist transportation needs in line with ADA requirements for permanent facilities.

14. *Should more flexibility be allowed on who develops TCPs--State DOTs, municipalities, contractors or law enforcement agencies--and how should the responsibility for developing TCPs be assigned? Should certification be required for TCP developers? How can the owners and contractors share the roles, risk and rewards in developing TCPs and implementing and operating work zones?*

**NSC Response:**

In many cases, the development of the TCP should be a collaborative process between the designer, the owner/agency, and the contractor. Each of these parties has a unique perspective on how and why the TCP should be developed, including the strength of the design and sequencing of work, the impact on the motoring public and the constructability and schedule of the plan. Changes should be permitted only when subjected to the normal change order or value engineering process. The State or Contracting agency should accept full responsibility.

Certification of TCP designers would not be necessary if a consultative process were to be used. Some type of certification or "competent person" requirements may be useful for large, high-visibility, high-cost, high-volume projects.

For liability reasons, many NSC members have expressed concerns that they are often reluctant to change a TCP, once developed by the government agency. There are precedents where the contractor has been made liable for accidents occurring in a work zone when the contractor, in good faith, sought and received a modification to the TCP. In other instances, compliance with a government-prescribed TCP has served as a shield from liability. In order for the industry to collaborate - and as a result develop better TCPs - the regulations will have to address the liability issue for participating, private sector parties.

15. *To ensure roadway mobility and safety and work area safety, should mobility and safety audits be required for work zones?*

**NSC Response:**

Yes. The frequency and depth of the audit should be linked to the hazardous nature of the project. For any project, regular and frequent audits of the traffic control devices should be conducted. The audit procedure should be developed through and in conjunction with the TCP and the TCP should be enforceable like other contractual requirements.

NSC provides a discussion of basic safety and health program elements in its 10-hour Work Zone Safety Training Course (including the concept of a "competent person") that should be incorporated into specific safety and health contract bid language.

16. *How can we better communicate the anticipated work zone impacts and the associated*

*mitigation measures to the public? Who--the State, local government, contractor, or other agency--should be responsible for informing the public?*

**NSC Response:**

Public outreach and communicating work zone implications to the public is a vital component of any long-term large or highly hazardous project. Developing an effective out reach program should begin at the design phase of the project and be a coordinated effort that includes all the major stakeholders (e.g., DOT, contractor, MPO, business and industry, emergency medial providers, delivery services, road users and communications specialists. The responsibility of informing the public and coordination this cross cutting team should rest with the transportation agency having jurisdiction over the project.

During certain construction phases, where the contractor has control over day-to-day operations, that company may be better positioned to provide real-time public communications through changeable message boards and signage concerning changes, delays, etc. Funding for these communication programs must be clearly defined and provided for in the contract documents.

*17. Should projects with substantial disruption include a public communication plan in the project development process? If so, what should such a plan contain?*

**NSC Response:**

Projects with substantial disruptions should include a public communication plan beginning with design and the project development process. Elements of this plan should include:

- (1) Duration of project
- (2) Reason why the construction work was needed
- (3) The benefits to the road user after completion of the project
- (4) Technologies being used to mitigate congestion/improve safety
- (5) How local businesses can help to reduce congestion/improve safety
- (6) Reminders of the inherit dangers to the workers and road users
- (7) Recommendations for alternate detour routing
- (8) A "crisis" communications component
- (9) Emergency/incident management contingencies/routing

*18. Should States and local transportation agencies report statistics on the characteristics of work zones (such as number of work zones, size, cost, duration, lanes affected, ADT, road classification, level of disruption and impacts on local network and businesses) to appropriate State or Federal agencies? If so, in what ways do you think this would be beneficial?*

**NSC Response:**

States and local transportation agencies should provide statistics on the key features, accident and incident data, and important characteristics of work zones compiled and reported in a uniform

format to enable interested parties to analyze compare data. Such information could be helpful in identifying best practices, technologies and methods to improve safety and reduce congestion. Comparative analysis of work zone statistics, to a national benchmark, could be the foundation for continually improving the mobility and safety in work zones.

It would be useful for FHWA - or another organization (NHTSA or Work Zone Clearinghouse) - to provide a database where relevant accident/incident data be reported, compiled and sorted in a standardized format. Such a program would enable interested parties to know how roadway construction programs will impact them, their families and their businesses.

Such information would be very useful to track successful programs, potential high-hazards areas, traveler delay, industry market trends, and type of construction taking place in the various jurisdictions.

It would help motorists make better informed travel plans; help the industry to track the breadth and type of work being conducted; predict and mitigate areas where safety problems may arise; and plan for future transportation needs.

*19. Should States and local transportation agencies report statistics on the mobility performance of work zones? Are typical mobility measures, such as, delay, travel time, traffic volumes, speed and queue lengths appropriate to analyze work zone mobility performance? What are the top three measures that are most appropriate?*

**NSC Response:**

States and local transportation agencies should report statistics on the mobility performance of work zones. Safety should also be included. The top three measurements of work zone performance should be safety, traffic volumes, and traffic delays.

It would be useful, however, to have a better, more standardized method for reporting work zone related incidents. This would help national, state, and local organizations better understand and mitigate against deaths and injuries in work zones in the future.

*20. Are the currently used measures for safety (typically, crashes, fatalities and injuries) appropriate to analyze work zone performance? If not, what other measures should be considered? Are current mechanisms for collecting this information adequate? If not, how can we improve them?*

**NSC Response:**

Fatalities and injuries are only the tip of the iceberg and, in some cases, the sample is so small that it is difficult to analyze the data and arrive at any appropriate conclusions. In addition, this data is not being collected or reported uniformly. Also, there is little information available on

the “other” crash categories ( ie personal injury and property damage). We believe that a coordinated national effort is needed to collect and report safety performance data in a standardized method.

See response to Question # 4.

## **ATTACHMENT 1**

### **Example of Contract Bid Language that Addresses Work Zone Safety**

Prior to starting work on the project, the contractor shall submit a copy of their Safety and Health Program (SHP) and an Internal Traffic Control Plan (ITCP). The contractor’s SHP shall address how the contractor will ensure that employees are protected from recognized safety and health hazards associated with the project. The SHP will establish and maintain policies, programs and procedures to ensure, at a minimum, compliance with OSHA and other regulatory agencies with jurisdiction, rules or guidelines. Multi-employer responsibilities will be identified in the program.

A **site safety officer** shall be assigned to large highway construction projects. The site safety officer shall be a competent person able to identify hazards that are present and those that could be expected. The site safety officer shall have the authority to stop work and to take the actions necessary to correct hazards.

#### **Company Safety and Health Program -- Basic Elements:**

1. Management Commitment and Employee Participation
  - a. A written safety and health program that addresses critical hazards
  - b. Management training that includes safety and health awareness
  - c. Employee participation in company safety and health programs
2. Jobsite Analysis
  - a. Jobsite systems to recognize and abate hazards in a timely manner, with particular attention to: internal traffic control, proper flagger techniques, working around equipment, night work, proper personal protective equipment
  - b. Requirements for regular jobsite safety and health inspections
  - c. Jobsite accountability for safety and health program enforcement
3. Hazard prevention
  - a. A policy of regular investigation of accidents to determine their causes and adoption of indicated changes in work practices

- b. Safety checklists for safety planning, emergency plans and procedures, and protective materials and equipment

#### 4. Training

- a. Training should be appropriate to each employee's level of responsibility.
- b. Examples of recognized training programs:
  - (1) An OSHA 10-hour training course tailored to address the unique hazards of the roadway construction industry (e.g., NSC course)
  - (2) Flaggers must complete a recognized 4-hour certification program (e.g., NSC, LIHTF, ATSSA courses)
- c. Competencies demonstrated through third party certification. For example, the Utilities Division of the National Safety Council administers the Certified Utility Safety Administrator program (CUSA) to maintain professionalism through the certification process. CUSA provides utility safety administrators with formal recognition of their knowledge, training and experience of safety practices in the utility industry.

#### 5. Multi-Employer Responsibilities:

- a. Host employers (e.g., general contractors) should inform the contract employers (e.g., subcontractors) of any known safety and health hazards that the contract employees may be exposed to prior to starting work. The host employer should also inform the contract employers of applicable provisions of the host employer's Safety & Health Program.
- b. Contract employers (e.g., subcontractors) should ensure that host employers are aware of hazards presented by contract work and how contract employers are addressing them. Contract employers also should instruct their employees about the hazards that they may be exposed to at the multi-employer worksite and the host employer's program for addressing those hazards.

#### **Internal Traffic Control Plan:**

A Traffic Control Plan (TCP) describes how a specific work zone is set up to ensure the safety of the motoring public traveling through the work zone. An Internal Traffic Control Plan (ITCP) provides a mechanism for coordinating the flow of construction vehicles, equipment, and workers operating in close proximity within the activity area so that the safety of the workers can be ensured.

Internal Traffic Control Plans should be developed for all medium, large, and multi-contractor jobs. However, for small recurrent operations, such as filling potholes, routine maintenance, and mowing, a checklist could be used in place of a complete ITCP.

**Elements of an Internal Traffic Control Plan (ITCP):**

1. Standard nomenclature for pieces of equipment and project personnel that will be on site
2. Delineated areas around specific pieces of equipment and operations where workers on foot are prohibited.
3. Locations for storing and servicing materials and equipment
4. Size and location of buffer zones
5. Description of internal signage and all internal traffic control devices
6. The location, time table, scope of the project contact information for participating parties, including other contractors and the contracting agency.
7. Anticipated traffic volume and speed, as well as a speed limit for operation within the work space.
8. Specifications for lighting in the work space
9. Interface between internal and external traffic control plans.
10. A Communications Plan that includes the following:
  - a. Channels of communication regarding changes in the ITCP
  - b. A means for workers on foot to talk with equipment operators, truck drivers, and other personnel in charge of controlling or coordinating the flow of traffic vehicles and equipment entering and leaving the work space and the movement of heavy equipment within the work space.
  - c. A means for grader operators, dozer operations, truck drivers and scraper operators to communicate with each other and with the prime and subcontractors.
  - d. Who is responsible for monitoring on-site communications between vehicle and equipment operators
11. A procedure for orienting independent truckers drivers and subcontractors to the work space and the ITCP.
12. Perform a trial implementation to test the ITCP.

Incorporate into the ITCP schematic diagrams depicting the movement of construction workers and vehicles within the work areas. Sample diagrams should be developed for paving, trenching, fall protection, working over water, working in close proximity to overhead electrical lines (or buried utilities), and dirt spread operations.

Provide additional procedures for project specific situations. Examples: night work, trenching, cranes, silica/lead, fall protection (bridge work), and sanitation.